

A comprehensive study of corneal tissue responses to customized surgical treatments

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Propositions

- 1. Corneal stiffness can be a diagnostic marker for sub-clinical keratoconus detection (chapter 2) and post-refractive surgery tissue healing (chapter 4).
- 2. In-vivo measurement of corneal viscosity using the Corvis-ST may not be possible in its current configuration (chapter 3).
- 3. The postoperative healing patterns of different refractive surgery procedures can be used in building surgery specific predictive finite element simulations (chapters 4 and 5).
- 4. Low predicted postoperative corneal stiffness and preoperative parameters matching the ectasia nomogram can lead to high post-refractive surgery ectasia risk (chapter 6).
- 5. Customized corneal crosslinking using corneal degeneration estimation can achieve results comparable to the Dresden protocol (chapter 7).
- 6. The use of artificial intelligence and machine learning should be greatly encouraged in the field of medicine.
- 7. The field of ophthalmology needs a commonly accepted data format for information exchange to boost scientific research.
- 8. Personalized medical care is the future, as no two patients have the exact disease presentation or tissue responses after surgery.
- 9. The SARS-CoV-2 virus has managed to uproot many lives, but as history tells us this too shall pass, and life will go on.